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Category "EPS" refrigerator > Expanded Polystyrene contains 10 documents.

1. **Thermocore Panel Systems: Specifications** [New Window]
... of structural insulated panels available on the market today; **Expanded Polystyrene (EPS)** and Polyurethane. ... is found in almost every **refrigerator** and freezer manufactured in the U.S. ...
URL: http://www.thermocore.com/epsvpoly.shtml
Sources: MSN 10, AltaVista 69

2. **PTEG Homepage english** [New Window]
... foaming technique (PUR). **Expanded Polystyrene**. foaming technique **(EPS)**. Engineering ...
URL: http://www.pteg.dkk.de/ptege.htm
Sources: MSN 20

3. **article3** [New Window]
... of an **expanded polystyrene (EPS)** packaging of an air conditioning unit. The **refrigerator** compressor was a critical ...
URL: http://www.indianpurchase.com/magonline/packaging/199912/ar...
Sources: MSN 46

4. **Preparation of Expandable Polystyrene (EPS)** [New Window]
2. Practice of free radical polymerization processes Preparation of **Expandable Polystyrene (EPS)** Suspension Polymerisation of Styrene Equipment: Parallel-sided flanged gas-tight glass vessel 250 ml, condenser, Inlet ... washed thoroughly with water and stored in a **refrigerator**. The n-pentane containing PS-beads are placed into a mould ...
URL: http://www2.ias.tuwien.ac.at/pers_dl/2_1_4.pdf
Sources: MSN 53

5. **SAMSUNG□s Digital World - Air Conditioner/ Technical Info** [New Window]
Refrigerator Air Conditioner Microwave Oven Washing Machine Vacuum Cleaner Home > Products > Home ... is composed of recycled **Expanded Polystyrene(EPS)**, polystyrene and other polymers. An LCA ...
URL: http://www.samsung.com/Products/AirConditioner/technicalinf...
Sources: AltaVista 53

6. **Cold Chain Control by PCM: Mrs UllaMaria Nordström-Holm, Manager Logistics Mr. Thomas A. Björk, Head of Project T amro** [New Window]
... pharmacies in the regular blue plastic box supplemented by an inner box, molded in **EPS (Expanded Polystyrene). ...** were stored in a **refrigerator** at just above +2°C, in order to imitate ...
URL: http://www.aircontainer.se/consulting.pdf
Sources: MSN 13

7. **Compare Prices and Read Reviews on 6 1/2mm Cubic Zirconia...** [New Window]
... with a high-density, ABS shell , an **expanded polystyrene (EPS)** impact liner ... ft Northland Master Series Refrigirator, GS72RFI 72" all-refri...http://www.epinions.com/Jewelry-6_1_2...
URL: http://www.epinions.com/Jewelry-6_1_2mm_Cubic_Zirconia_Stud...
Sources: Netscape 17

8. **Energy Efficiency in the European Union** [New Window]
... **refrigerator** manufacturer has encased evacuated insulation panels, not in polyurethane foam, but in preformed blocks of **expanded polystyrene (EPS) ...**
URL: http://hem.dis.anl.gov/eehem/98/980110.html
Sources: MSN 17

9. **Monsanto,Chemplex,Huntsman,chemicals,industry,Australia,polystyrene** [New Window]
... making household appliances, **refrigerator** liners, food packaging. Spacel® **Expanded Polystyrene (EPS)** - used in thermal ...
URL: http://www.chemlink.com.au/huntsmanchem.htm
Sources: MSN 26

10. **Huntsman Chemical Co. Australia Ltd. - Plastics Raw Materials & Additives Suppliers** [New Window]
... (plates, cutlery cups), food packaging, **refrigerator** liners, ball point pens etc. Spacel **Expanded Polystyrene (EPS) ...**
URL: http://www.plasnet.com.au/huntsman
Sources: MSN 28

Thermocore
Structural Insulated Panel Systems

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The Difference Between Polyurethane and Polystyrene Panels

There are basically two types of structural insulated panels available on the market today; Expanded Polystyrene (EPS) and Polyurethane. The products share some common features such as both can be manufactured in sizes up to 8'x24' and both use OSB as there skins. That is pretty much where the similarities stop. It is important to note that polyurethane was invented to improve upon the short falls of EPS. EPS history dates back over 50 years where as polyurethane's history is relatively short. The following is a breakdown of the differences between the two products.

R-Value- Polyurethane has an R-value of 7.0-8.0 per inch depending on density whereas EPS has an R-value of 3.5-4.0 per inch. *Polyurethane is the highest rated insulation, per inch, in the world. It is found in almost every refrigerator and freezer manufactured in the U.S. It is the product of choice to insulate walk in coolers and refrigerated semi-trailers. Most modern water heaters are now insulated with polyurethane. Your grocery coolers and freezers all now have polyurethane. The reason for the shift to polyurethane is in its value. Polyurethane delivers twice the insulating power vs. EPS but it does not cost twice as much. As a matter of fact when you compare the cost of panel systems, Thermocore often cost less than other EPS systems per R-value. Value and return on your insulating dollar are the main reasons industry has shifted to polyurethane as it's main choice for insulation.

Fire Resistance- Polyurethane is generally available in two systems. A rated system and a non-rated polyurethane system. Thermocore uses a rated system. A rated system has had a flame resistant chemical added to the polyurethane to make it resistant to fire. Thermocore's polyurethane has a UL rating of Class 1. This means that our polyurethane is not a source of fuel for a fire and if left on it's own, the flame will self extinguish. Class 1 is the highest rating given to a building product. In addition, polyurethane is termed a thermal-set plastic which means it will not melt. It is not damaged until temperatures approach 1000 degrees at which point it chars. Conversely, EPS is not a thermal set plastic and starts to soften and or reshape at temperatures around 180 degrees and begins to completely breakdown and melt at around 240 degrees. Clearly, there is a distinct advantage to using polyurethane.

Moisture Resistance- Polyurethane has one of the lowest moisture permeability ratings in the building community. Polyurethane's permeance rating is 1.2-2.5 vs. EPS which has a moisture permeance rating of 2.0-5.0*. This difference may not be significant except in high humidity areas where the plastic industry does recommend a moisture barrier for EPS but not for polyurethane. Interestedly, many EPS companies include an interior and exterior vapor barrier in the calculation of there panels R-values. Be sure to read the fine print.

Chemical Resistance- Polyurethane is resistant to damage from most over the counter chemicals. EPS on the other hand can be highly reactive to petroleum based chemical products including gasoline, many types of common insect sprays and common construction glues like "Liquid Nails". Caution should be used to avoid contact between EPS and any petroleum products.

Density- EPS comes in only one density of 1lb. Polyurethane can be manufactured in a variety of densities. Thermocore panels are manufactured to a minimum density of 2.2lbs. This increased density offers greater strength properties when compared with lower density products.

Waste- Thermocore Panels unique panel manufacturing process allows us to produce panels in a "waste free" manor. We have no waste at our plant or a your

NOTES:

job site. EPS manufacturers rely on the cutting of panels to fit on your house and to create rough openings. This method leads to high scrap rates of material that often cannot be recycled.

Manufacturing Technique- Manufacturing with polyurethane is considerably more "high tech" than manufacturing EPS panels. Thermocore's unique manufacturing process has brought manufacturing polyurethane panels down to a relatively "low tech" level. The basic difference in the two manufacturing processes lies in the bonding method. Polyurethane is in essence it's own adhesive, and a darn good one at that. Polyurethane glues are often used to bond plywood and OSB. It is clearly on of the most versatile and widely used adhesives in the world. The beauty of polyurethane is not only does it provide excellent R- value and strength; it also creates one of the strongest and most consistent bonds in the industry. EPS panels are manufactured by gluing sheets of OSB to sheets of EPS foam. Both come pre-formed from the manufacturer. Glue is than spread either manually or by machine on the skins. The two faces are than matched and held together until the glued has dried. The technical aspect of EPS panels lies in the glue.

The reason EPS manufacturers are so much more common lies in the difficulty of manufacturing and start up costs. EPS manufacturers buy all thier raw materials in finished form and need very little equipment and labor to produce panels. Thermocore buys it's raw material in bulk form and manufacturers custom panels. It is indeed more labor intensive but not more expensive to do. Cheaper and easier is why there are more EPS manufacturers than polyurethane manufacturers. When comparing the two properties of Polyurethane vs. EPS it is not hard to see that where strength, R-value, fire resistance and bond are a concern, polyurethane clearly has an advantage over all other foam products.

Cold Storage

EPS is an excellent insulation to enclose close storage space used to cool and store food, flowers and other commodities at temperatures ranging from normal room temperature (68 F) down to cryogenic temperatures (-148 C). EPS is well suited for this type of insulation because of its excellent thermal resistance, its low permeability to water vapor and air, low absorption of water, dimensional stability, chemical inertness and durability, lack of odor and vermin resistance.

EPS is also used to insulate containers that hold cold liquids or gases pipes and vessels in cold environments such as utility and sewer lines.

ASSOCIATIONS ADVANCE AMERICA

(410)451-8341 (phone) (410)451-8343 (fax)
1298 Cronson Boulevard, Suite 201 Crofton, MD 21114

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